The invention claimed is:

1. A welding machine, comprising:

a welding torch assembly;

a first rotary head configured to receive and selectively retain a first end of a bar and a first link approximate the first end;

a second rotary head configured to receive and selectively retain a second end of the bar and a second link approximate the second end;

a fixture configured to receive and selectively retain a third link, wherein the fixture is positioned between the first and second rotary heads;

a processor coupled to the welding torch assembly, the first and second rotary heads and the fixture; and

a memory subsystem coupled to the processor, the memory subsystem storing code that when executed by the processor instructs the processor to perform the steps of:

controlling the first and second rotary heads and the welding torch assembly to weld the first and second links to the bar along at least a portion of the circumference of the bar;

controlling the welding torch assembly to tack weld the third link to the bar at a first desired orientation;

releasing the third link from the fixture; and

controlling the welding torch assembly and the first and second rotary heads to weld the third link to the bar along at least a portion of the circumference of the bar.

2. The machine of claim 1, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to position the first and second links at a second desired orientation with respect to each other prior to welding the first and second links to the bar.

3. The machine of claim 2, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to position the first and second links at the first desired orientation with respect to the third link prior to tack welding the third link to the bar.

4. The machine of claim 1, wherein the first and second rotary heads each include an associated individually controllable servo motor and the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the servo motors to position the first and second links at a second desired orientation with respect to each other prior to welding the first and second links to the bar.

5. The machine of claim 4, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the servo motors to position the first and second links at the first desired orientation with respect to the third link prior to tack welding the third link to the bar.

6. The machine of claim 1, wherein the welding torch assembly includes a first welding torch and a second welding torch that are controlled to simultaneously weld the first link and the second link, respectively, to the bar.

7. The machine of claim 1, wherein first and second rotary heads are selectively controllable to achieve a 360 degree weld between the first and second links and the bar.

8. The machine of claim 1, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to rotate and release the bar to unload the bar from the machine.

9. The machine of claim 1, further comprising:

a first torque transducer coupled to the processor and positioned to measure a torque applied by the first rotary head, wherein a motor associated with the first rotary head includes a position encoder, and wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

locking the second rotary head;

controlling the motor associated with the first rotary head to apply a first predetermined torque to the first and second links after the first and second links are welded to the bar; and

determining whether the first and second links deflect more than a first predetermined amount as provided by the position encoder associated with the first rotary head during the application of the first predetermined torque.

10. The machine of claim 9, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

recapturing the third link in the fixture after the third link is welded to the bar;

controlling the motor associated with the first rotary head to apply a second predetermined torque to the third link after the third link is welded to the bar; and

determining whether the third link deflects more than a second predetermined amount as provided by the position encoder associated with the first rotary head during the application of the second predetermined torque.

11. A welding machine, comprising:

a welding torch assembly;

a first rotary head configured to receive a first end of a torsion bar for an automotive seat and to receive and selectively retain a first link approximate the first end;

a second rotary head configured to receive a second end of the bar and to receive and selectively retain a second link approximate the second end;

a fixture configured to receive and selectively retain a third link, wherein the fixture is positioned between the first and second rotary heads;

a processor coupled to the welding torch assembly, the first and second rotary heads and the fixture; and

a memory subsystem coupled to the processor, the memory subsystem storing code that when executed by the processor instructs the processor to perform the steps of:

controlling the welding torch assembly to weld the first link to the bar along at least a portion of a circumference of the bar;

controlling the welding torch assembly to weld the second link to the bar along at least a portion of the circumference of the bar;

controlling the welding torch assembly to tack weld the third link to the bar at a first desired orientation;

releasing the third link from the fixture; and

controlling the welding torch assembly and the first and second rotary heads to weld the third link to the bar along at least a portion of the circumference of the bar.

12. The machine of claim 11, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to position the first and second links at a second desired orientation with respect to each other prior to welding the first and second links to the bar.

13. The machine of claim 12, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to position the first and second links at the first desired orientation with respect to the third link prior to tack welding the third link to the bar.

14. The machine of claim 11, wherein the first and second rotary heads each include an individually controllable servo motor and the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the servo motors to position the first and second links at a second desired orientation with respect to each other prior to welding the first and second links to the bar.

15. The machine of claim 14, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the servo motors to position the first and second links at the first desired orientation with respect to the third link prior to tack welding the third link to the bar.

16. The machine of claim 11, wherein the welding torch assembly includes a first welding torch and a second welding torch that are controlled to simultaneously weld the first link and the second link, respectively, to the bar.

17. The machine of claim 11, wherein first and second rotary heads are selectively controllable to achieve a 360 degree weld between the first and second links and the bar.

18. The machine of claim 11, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to rotate and release the bar to unload the bar from the machine.

19. The machine of claim 11, further comprising:

a first torque transducer coupled to the processor and positioned to measure a torque applied by the first rotary head, wherein a motor associated with the first rotary head includes a position encoder, and wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

locking the second rotary head;

controlling the motor associated with the first rotary head to apply a first predetermined torque to the first and second links after the first and second links are welded to the bar; and

determining whether the first and second links deflect more than a first predetermined amount as provided by the position encoder associated with the first rotary head during the application of the first predetermined torque.

20. The machine of claim 19, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

recapturing the third link in the fixture after the third link is welded to the bar;

controlling the motor to apply a second predetermined torque to the third link after the third link is welded to the bar; and

determining whether the third link deflects more than a second predetermined amount as provided by the position encoder during the application of the second predetermined torque.

21. A test assembly for testing the strength of a weld, comprising:

a first rotary head configured to receive and selectively retain a first end of a bar and a first link approximate the first end, wherein the first link is welded to the bar;

a second rotary head configured to receive and selectively retain a second end of the bar and a second link approximate the second end, wherein the second link is welded to the bar;

a processor electrically coupled to the first and second rotary heads;

a first torque transducer coupled to the processor and positioned to measure a torque applied by the first rotary head, wherein a motor associated with the first rotary head includes a position encoder;

a memory subsystem electrically coupled to the processor, the memory subsystem storing code that when executed by the processor instructs the processor to perform the steps of:

locking the second rotary head;

controlling the motor associated with the first rotary head to apply a first predetermined torque to the first and second links; and

determining whether the first and second links deflect more than a first predetermined amount as provided by the position encoder associated with the first rotary head during the application of the first predetermined torque.

22. The assembly of claim 21, further comprising:

a fixture configured to receive and selectively retain a third link that is welded to the bar, wherein the fixture is coupled to the processor and is positioned between the first and second rotary heads, and wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

capturing the third link in the fixture;

controlling the motor to apply a second predetermined torque to the third link; and

determining whether the third link deflects more than a second predetermined amount as provided by the position encoder associated with during the application of the second predetermined torque.

23. The assembly of claim 22, wherein the test assembly further comprises a welding machine that includes:

a welding torch assembly, wherein the processor is coupled to the welding torch assembly and the memory subsystem stores additional code that when executed by the processor instructs the processor to perform the additional steps of:

synchronously controlling the first and second rotary heads while the first and second links are welded to the bar;

controlling the welding torch assembly to tack weld the third link to the bar at a first desired orientation;

releasing the third link from the fixture; and

controlling the welding torch assembly and the first and second rotary heads to weld the third link to the bar along at least a portion of the circumference of the bar.

24. The machine of claim 23, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to position the first and second links at a second desired orientation with respect to each other prior to welding the first and second links to the bar.

25. The machine of claim 24, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to position the first and second links at the first desired orientation with respect to the third link prior to tack welding the third link to the bar.

26. The machine of claim 21, wherein the welding torch assembly includes a first welding torch and a second welding torch that are controlled to simultaneously weld the first link and the second link, respectively, to the bar.

27. The machine of claim 21, wherein first and second rotary heads are selectively controllable to achieve a 360 degree weld between the first and second links and the bar.

28. The machine of claim 21, wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the first and second rotary heads to rotate and release the bar to unload the bar from the machine.

29. A welding machine, comprising:

a welding torch assembly;

a first rotary head configured to receive and selectively retain a first end of a bar and a first link approximate the first end;

a second rotary head configured to receive and selectively retain a second end of the bar and a second link approximate the second end;

a processor coupled to the welding torch assembly, the first and second rotary heads and the fixture; and

a memory subsystem coupled to the processor, the memory subsystem storing code that when executed by the processor instructs the processor to perform the steps of:

controlling the first and second rotary heads and the welding torch assembly to weld the first and second links to the bar along at least a portion of the circumference of the bar; and

controlling the first and second rotary heads to rotate and release the bar to unload the bar from the machine.

30. The machine of claim 29, further comprising:

a fixture configured to receive and selectively retain a third link, wherein the fixture is positioned between the first and second rotary heads, and wherein the memory subsystem includes additional code for instructing the processor to perform the additional step of:

controlling the welding torch assembly to tack weld the third link to the bar at a first desired orientation;

releasing the third link from the fixture; and

controlling the welding torch assembly and the first and second rotary heads to weld the third link to the bar along at least a portion of the circumference of the bar.